



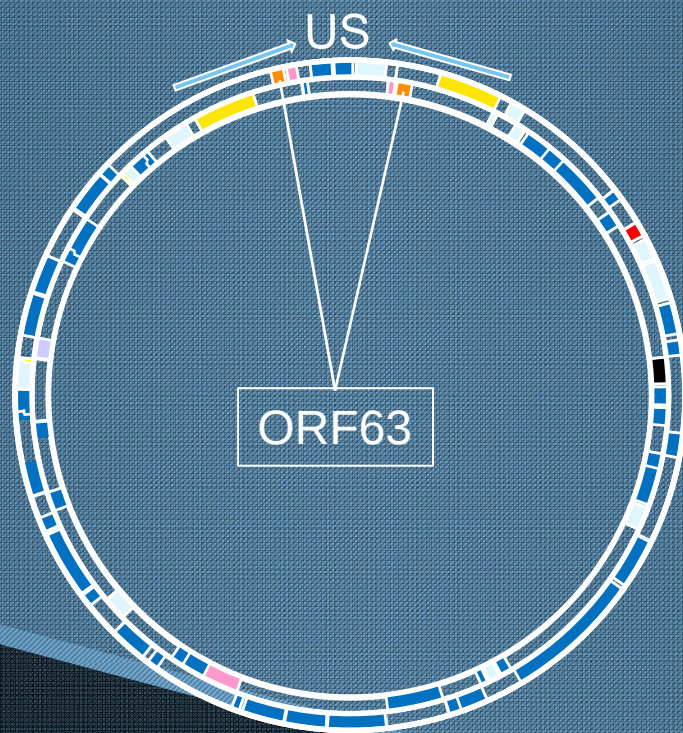
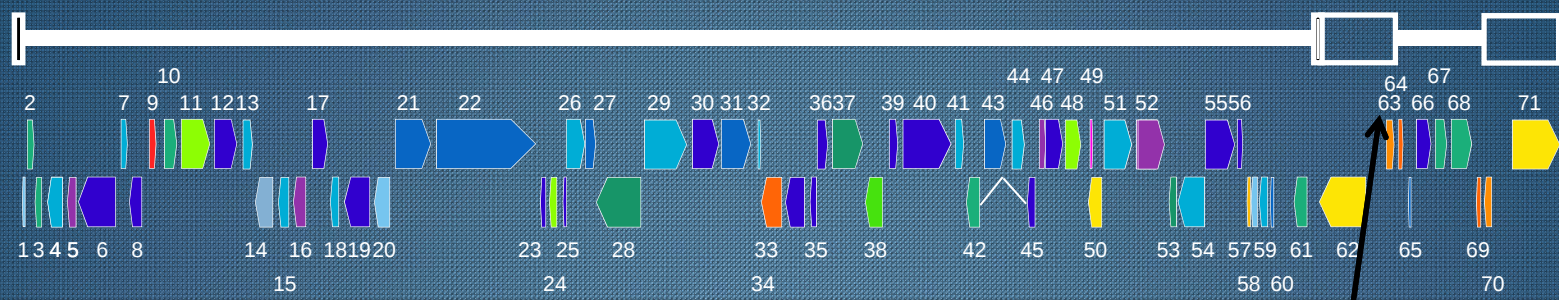
3D Normal Human Neural Progenitor Tissue-Like Assemblies: A Model of Persistent VZV Infection

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NASA Johnson Space Center

October 28, 2013

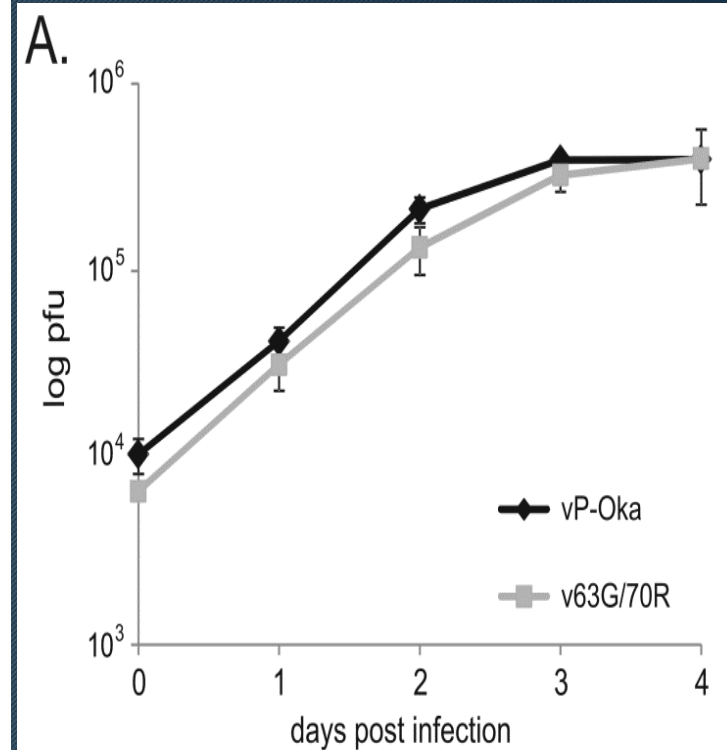


ORF63

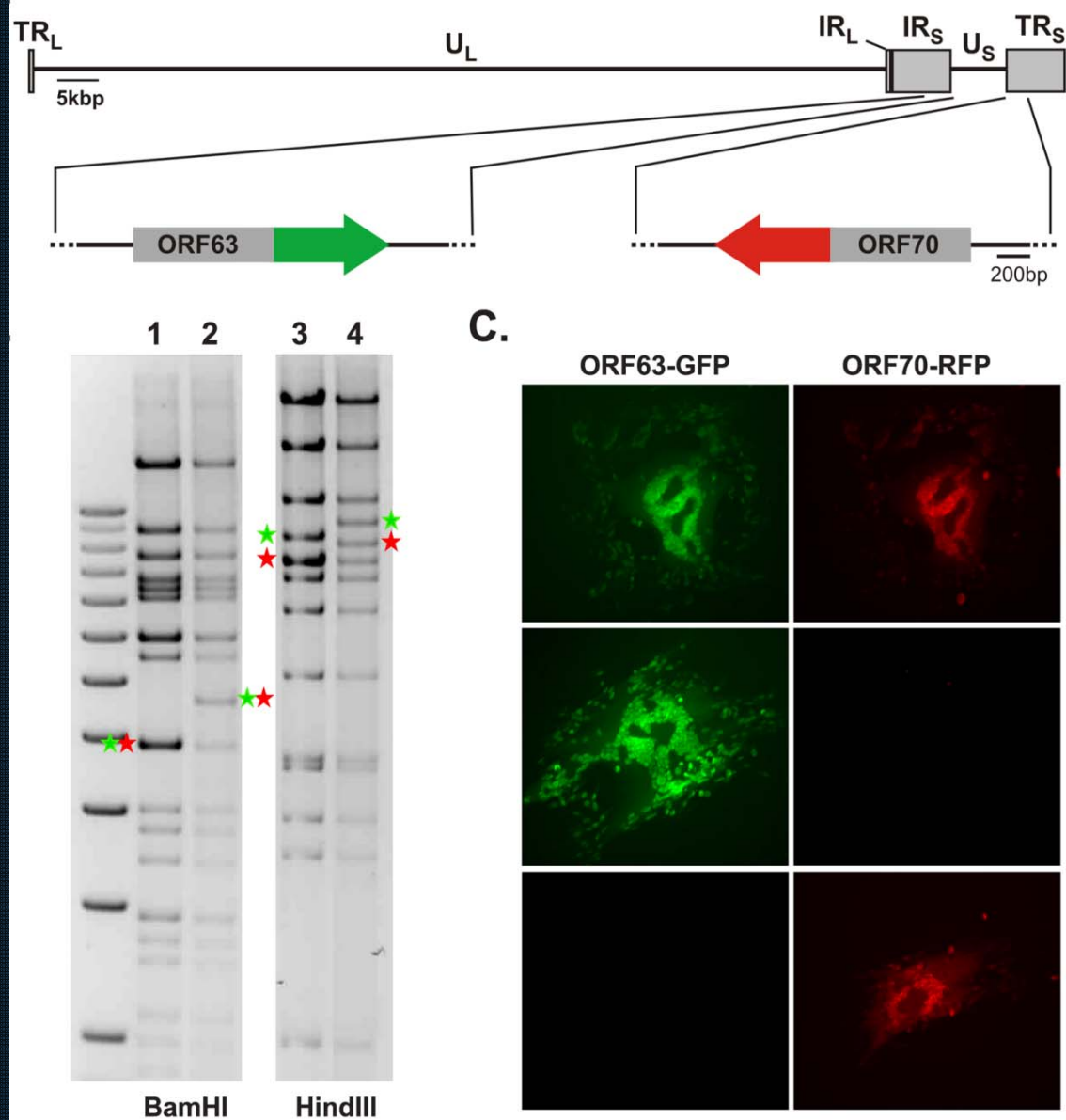
ORF70

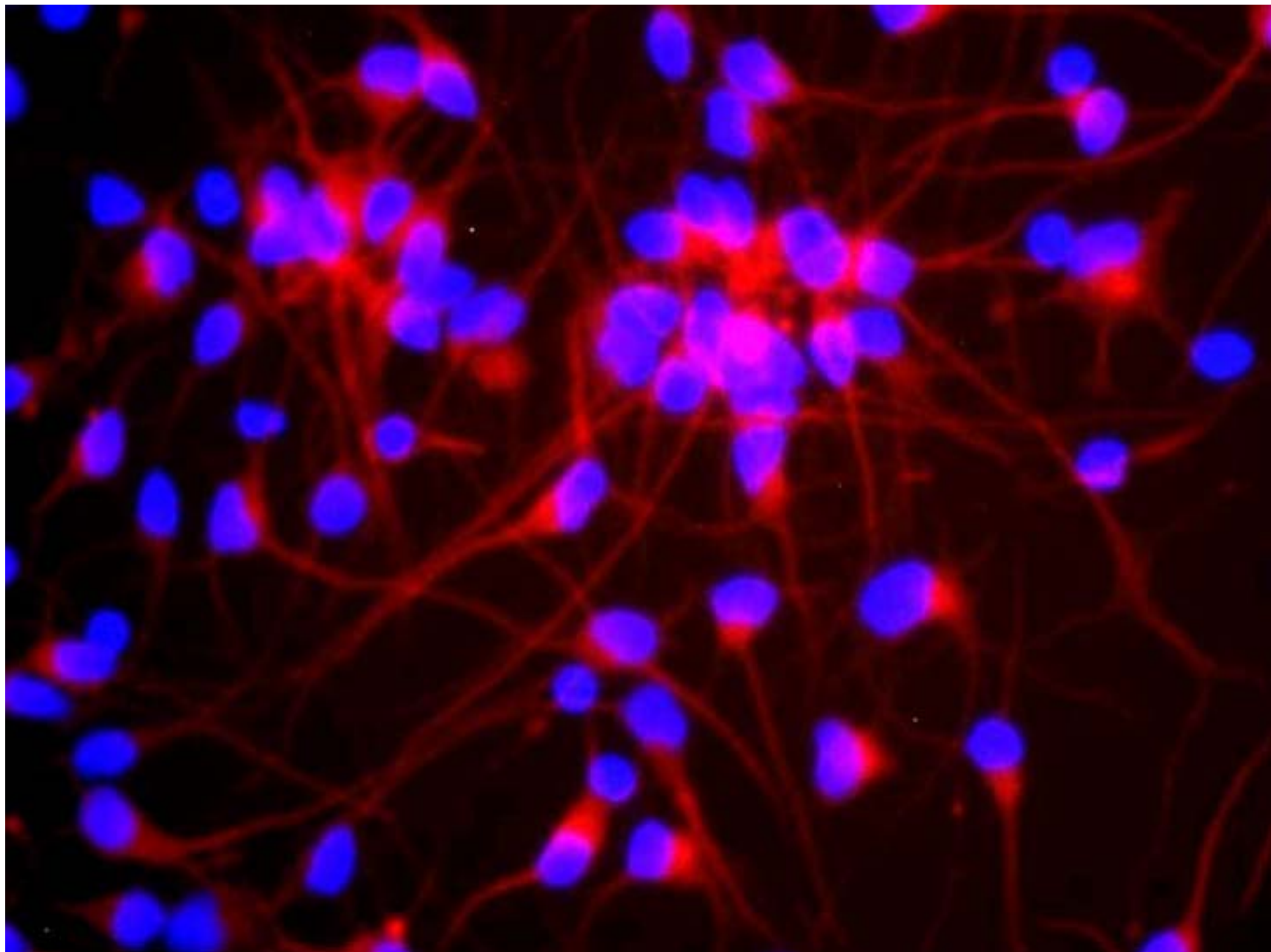


relative expression



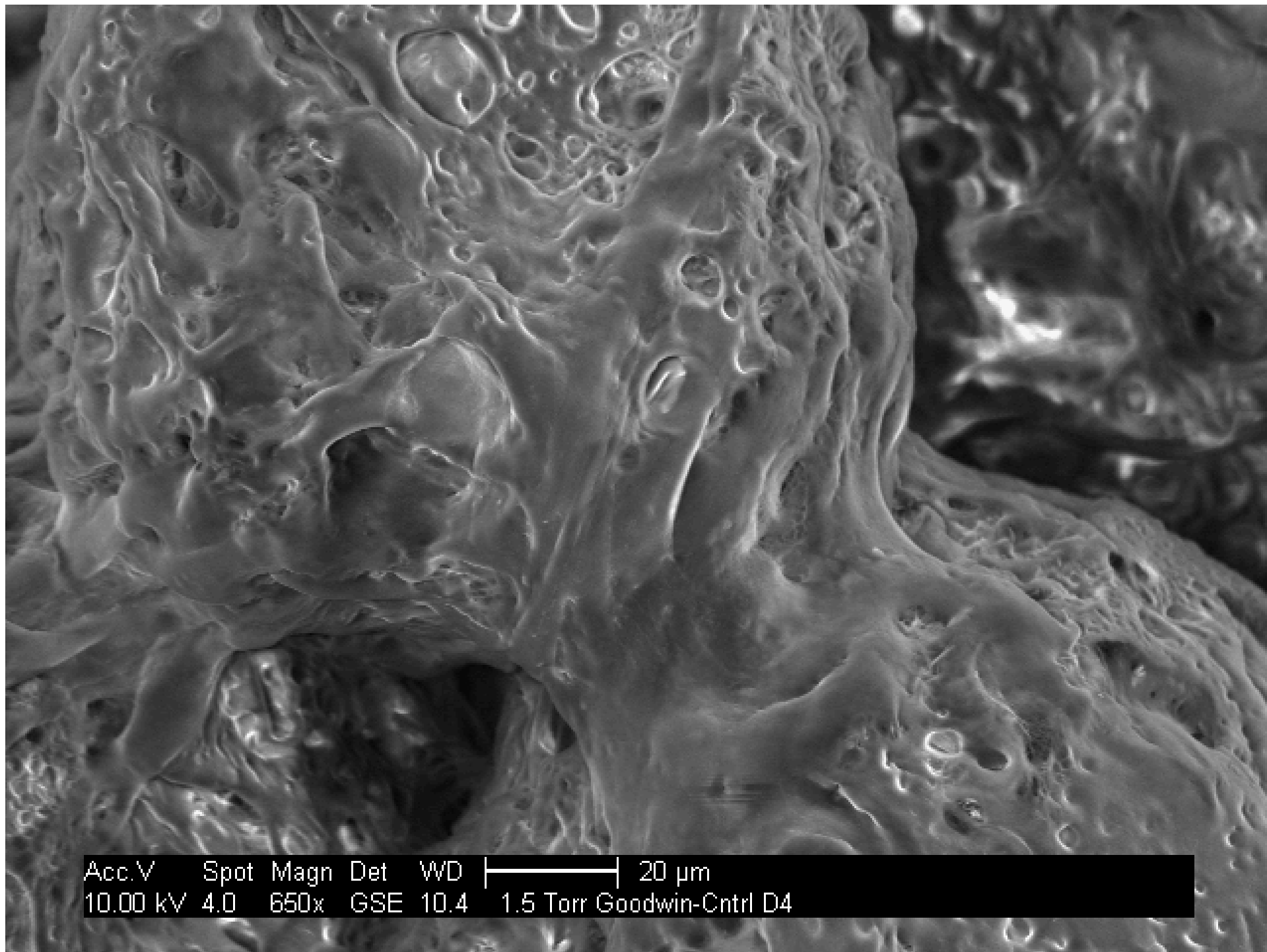
Goodwin TJ, McCarthy M, Osterrieder N, Cohrs RJ, Kaufer BB (2013), "Three-Dimensional Normal Human Neural Progenitor Tissue-Like Assemblies: A Model of Persistent Varicella-Zoster Virus Infection". *PLoS Pathogens* 9(8): e1003512. doi:10.1371/journal.ppat.1003512



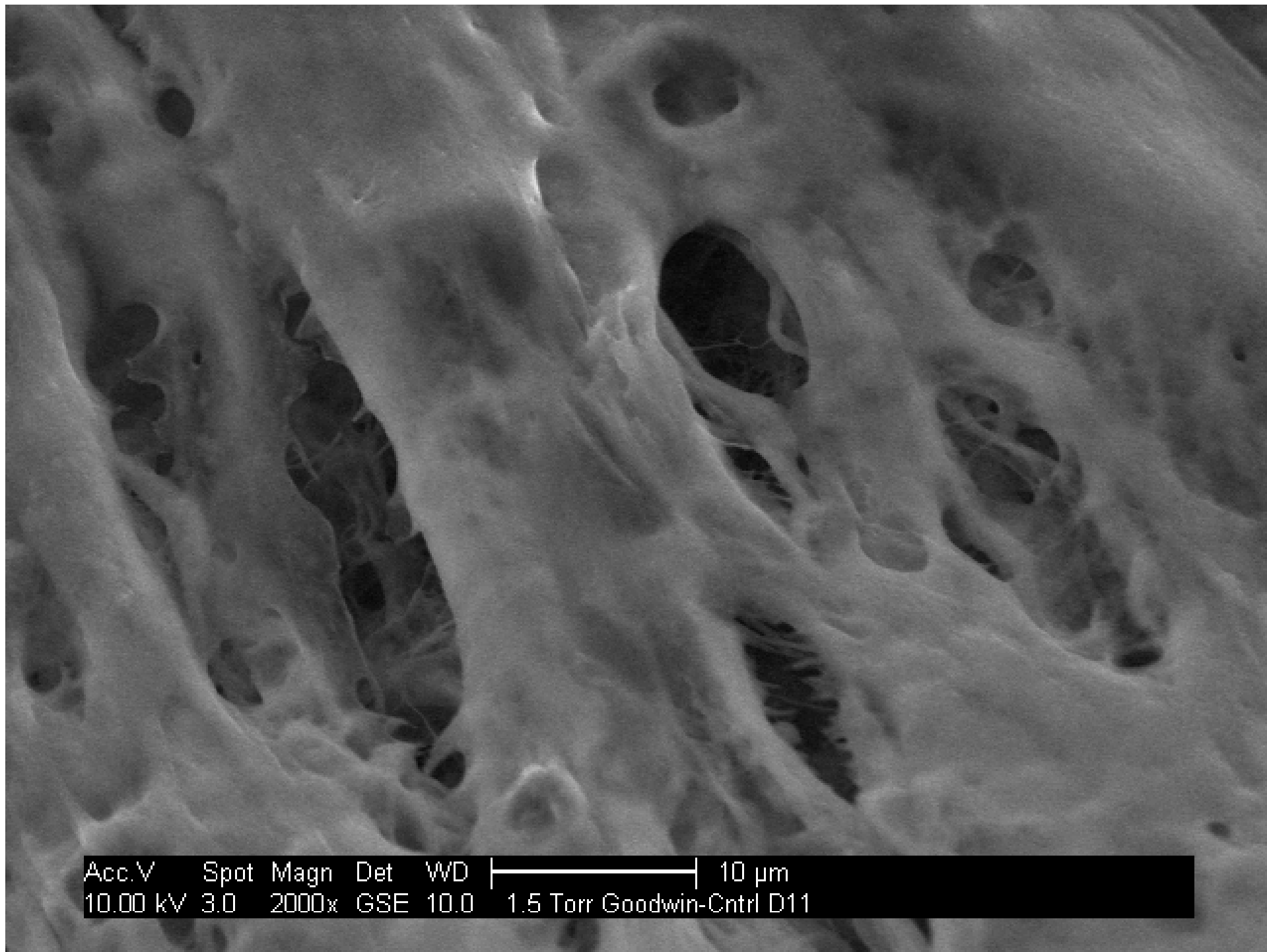




Acc.V Spot Magn Det VWD | 200 μ m
10.00 kV 3.0 150x GSE 9.7 1.5 Torr Goodwin-Cntrl D11

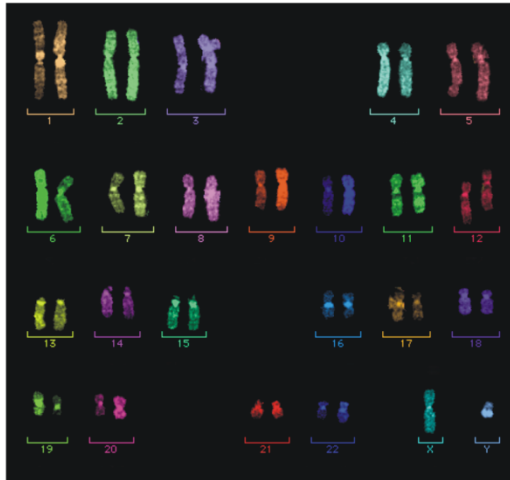


Acc.V	Spot	Magn	Det	VWD	20 μm
10.00 kV	4.0	650x	GSE	10.4	1.5 Torr Goodwin-Cntrl D4

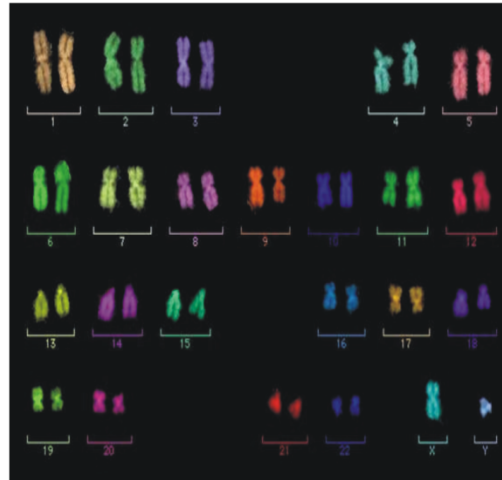


Acc.V	Spot	Magn	Det	WD		10 µm
10.00 kV	3.0	2000x	GSE	10.0	1.5 Torr Goodwin-Cntrl D11	

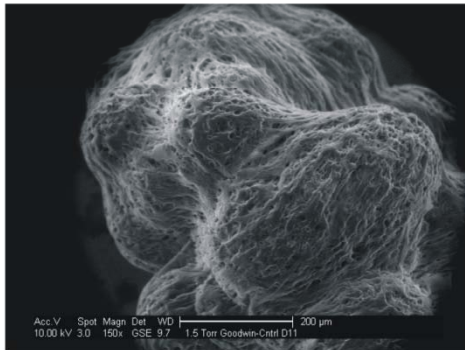
A.



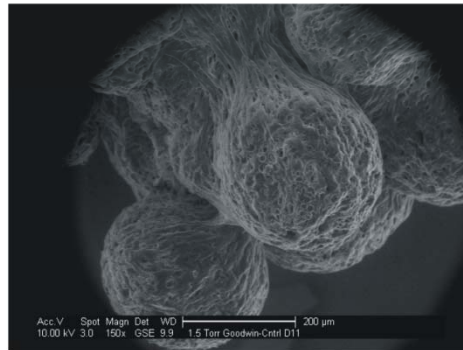
B.



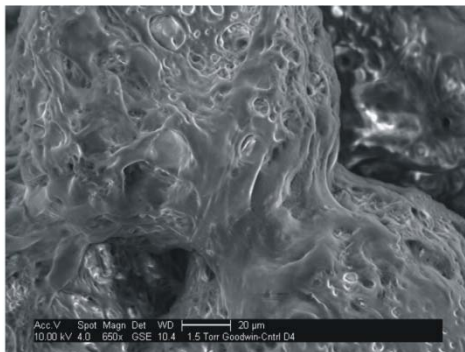
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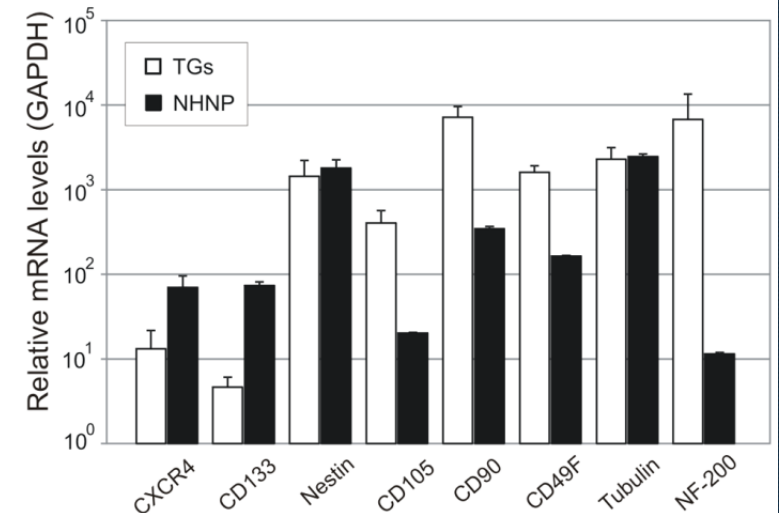
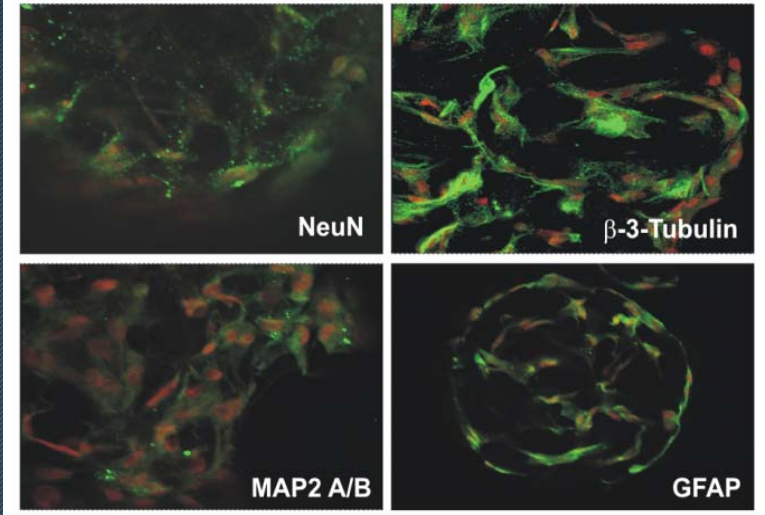
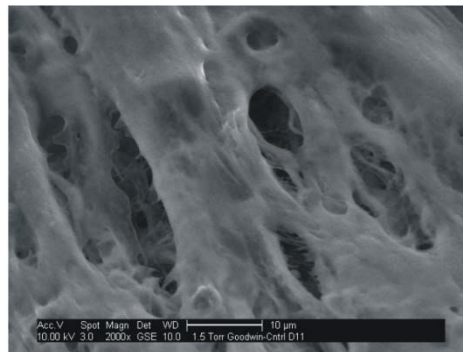
D.



E.



F.

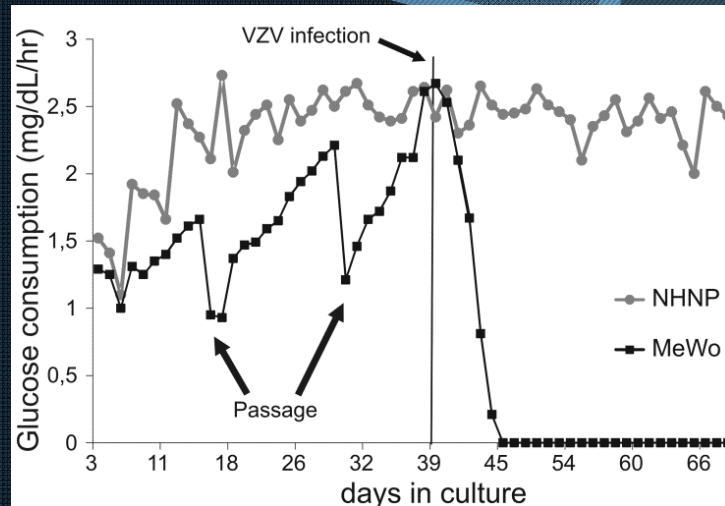


1 2 3 4 5 6 7 7

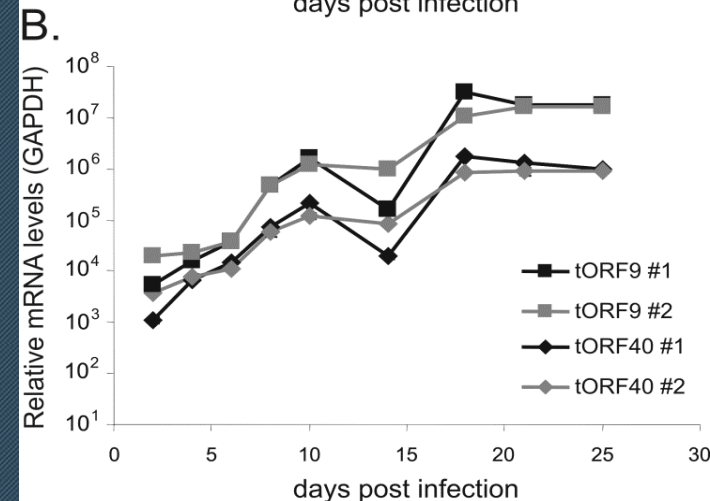
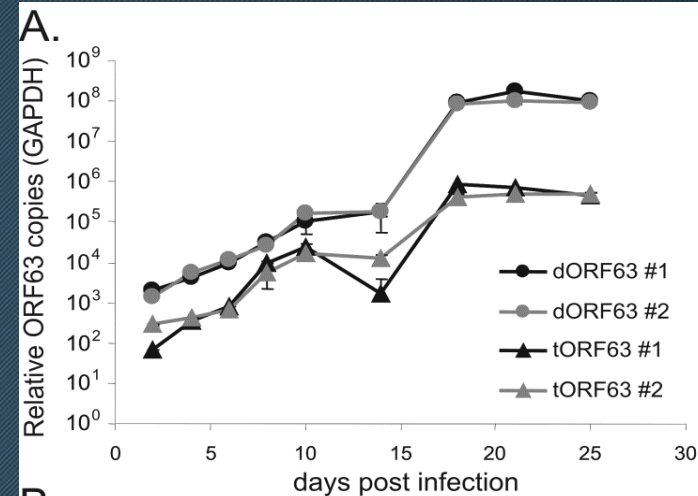
- 1. neural progenitor
- 2. primitive neural stem cell
- 3. neuronal precursor
- 4. neural stem cell
- 5. neuronal progenitor
- 6. early progenitor maturation
- 7. fully differentiated neuron



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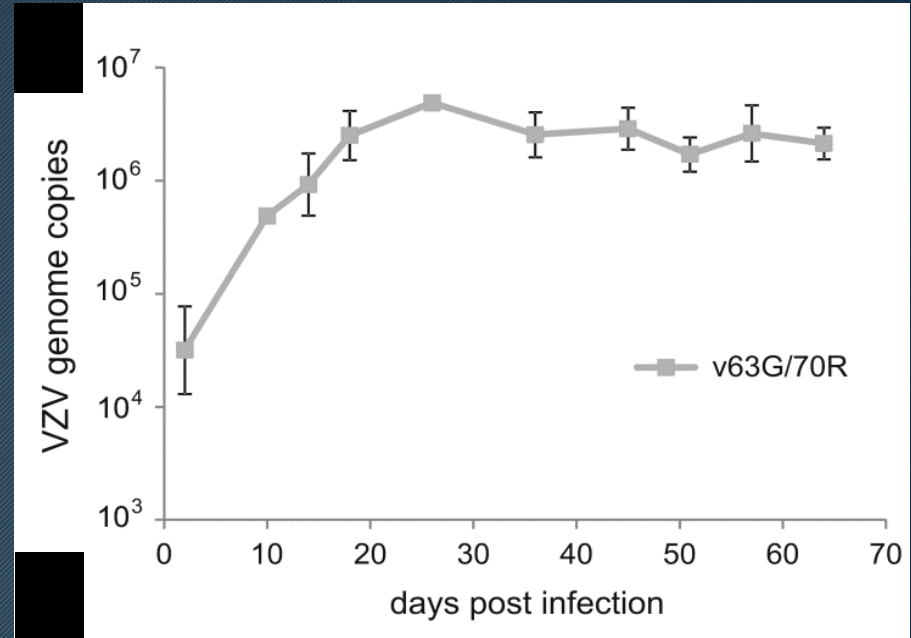
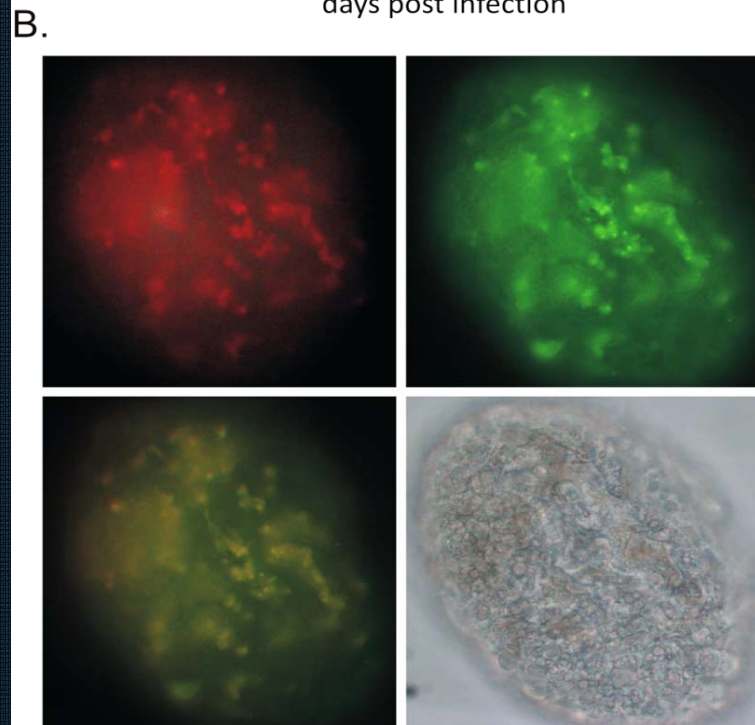
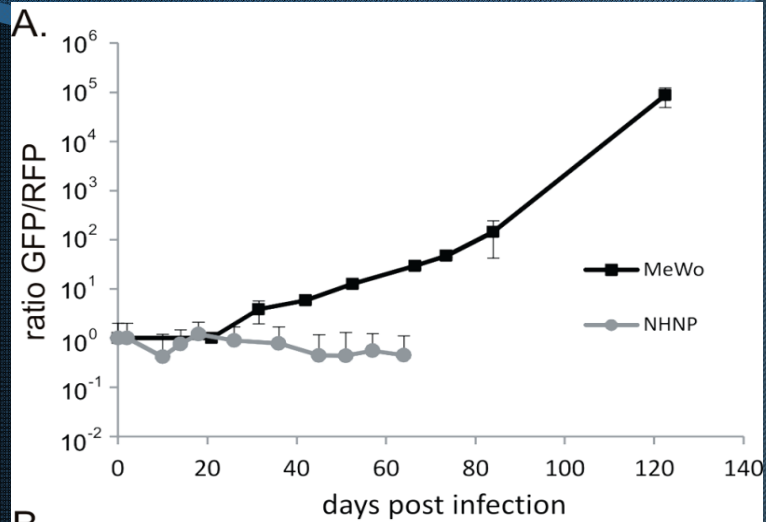


days post infection	plaque forming units per ml (5 wells)				
	1	2	3	4	5
0	371	351	207	402	457
2	5	2	2	1	2
4	3	0	0	2	2
6	1	2	2	2	1
10	0	1	0	0	2
14	0	0	0	0	0
21	0	0	0	0	0
25	2	1	1	3	2
30	0	0	0	0	0
35	0	0	1	1	0



cell free virus

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- Rearrangement recombination is frequent in MeWo cell
- Rearrangement recombination is absent in NHNP-TLA
- Both ORF63 and ORF70 are expressed in NHNP-TLA
- VZV-infected NHNP-TLA are stable for months



Acknowledgment

Co-Authors: Maureen McCarthy (NASA/USRA), Randall Cohrs (University Of Colorado)
Nikolas Osterrieder and Benedikt B. Kaufer (Freie Universitatet, Berlin)

Technical help: Laurie Graff, Igor Traktinskiy, Nathan Bos, Kyle Sorensen (UCDMC)
Mayra Nelman-Gonzales and Kerry George (Wyle Life Sciences)

Editorial help: Millie Young

Funding: NASA Human Research Program grant/Rapid Operational Investigation (TJG)
NIH Public Health Service grants AG032958 and R01NS082228 (RJC)
NIH Public Health Service grant AI061412 (NO)